

What Is Claimed Is:

- (1) Agonist anti-CD40 molecules that can bind to and stimulate professional or non-professional human APCs.
- 5 2. The agonist anti-CD40 molecules of claim 1 wherein the human professional APCs are human dendritic cells
- (3) Agonist anti-CD40 molecules which enhance the stimulatory effect of CD40L on CD40 positive cells
- (4) Agonistic anti-CD40 molecules which induce phenotypical and 10 functional maturation of monocyte derived dendritic cells.
- 15 5. The agonist anti-CD40 molecules of claim 1, 2, 3 or 4 wherein said molecules can simultaneously bind to CD40 with CD40L, as determined by their inability to inhibit CD40L binding to CD40 or their inability to inhibit of binding of sCD40 to CD40L..
6. The agonist anti-CD40 molecules of claim 1, 2, 3 or 4 which completely inhibit CD40L binding to CD40.
7. A composition comprising a combination of agonist anti-CD40 molecules according to any of claims 1 to 5.
- 20 8. The composition of claim 7 including at least one agonist anti-CD40 molecule which is a strong activator of binding of sCD40L to CD40, and at least one agonist anti-CD40 molecule which is a partial or non-inhibitor of binding of sCD40L to CD40 and of binding of sCD40 to CD40L.
- 25 9. The agonist anti-CD40 molecules of any of claims 1 to 6 which are monoclonal antibodies.
- (10) A bispecific agonist anti-CD40 monoclonal antibody wherein each specificity is for a different epitope on CD40.

11. The bispecific monoclonal antibody of claim 10 wherein one specificity is a strong activator of binding of sCD40L to CD40, and one specificity is a partial or non-inhibitor of binding of sCD40L to CD40.
- 5 12. The monoclonal antibodies of claim 9 which are chimeric, humanized, Deimmunised™ or human.
13. The monoclonal antibodies of claim 12 or fragments, analogues or homologues thereof, or a peptide, oligonucleotide, peptidomimetic or an organic compound which binds to the same epitopes as such antibodies.
- 10 14. The fragments of claim 13 which are Fab, F(ab')₂ Fv or single chain Fv.
- 15 16. Cell lines producing the monoclonal antibodies or fragment thereof of claim 9.
17. Cell lines producing the monoclonal antibodies or fragment thereof of claim 12.
18. Gene constructs coding for any of the molecules of claim 12.
19. Gene constructs coding for any of the molecules of claim 13.
- 20 20. Cells transfected or infected with the gene constructs of claim 17.
- 20 20. Cells transfected or infected with the gene constructs of claim 18.

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